Pulmonary Nodules Fleischer 2017 - Incidental (Clickable Image version): (Fleischer 2017 guidance for managing incidental pulmonary nodules on CT (Clickable Image/Impression only))

Pulmonary nodules are among the most common incidental findings in the body and determining which nodules require follow-up or intervention can substantially affect risk to the patient and healthcare costs. A landmark paper describing guidelines for managing incidental pulmonary nodules was published by the Fleischner Society in 2005, and was updated in 2017, incorporating multiple new concepts, including differences for managing solid, ground-glass and part-solid nodules and for multiple nodules.

This module adopts these new guidelines for when to follow patients or refer them for management. These recommendations can be inserted directly into the radiology report. Please note that two versions of this module are available. This module provides the user with a graphic table with clickable cells that are converted to text for the Impression and Recommendations only. The alternative module version has the user enter specific data into multiple fields and the Findings, Impression, Recommendations, and Citation are available to insert.

(Ref.: MacMahon H, Naidich DP, Goo JM, et al. Guidelines for Management of Incidental Pulmonary Nodules Detected on CT Images: From the Fleischner Society 2017. Radiology 2017;284:228–243. https://doi.org/10.1148/radiol.2017161659)

Solid

	<6 mm	6–8 mm	>8 mm
Single	Low risk **No routine follow-up**	Low risk **CT at 6–12 months** *(then consider CT at 18–24 mos.)*	**Consider PET/CT or tissue sampling, vs. CT at 3 months**
	Unknown risk **No routine follow-up** *or* **Optional CT at 12 months** *per risk*	Unknown risk **CT at 6–12 months** *(then consider CT at 18–24 mos.) per risk*	
	High risk **Optional CT at 12 months** *Stronger consideration if suspicious nodule morphology and/or upper lobe location*	High risk **CT at 6–12 months** *(then CT at 18–24 months)*	
Multiple *Most suspicious nodule drives management*	Low risk **No routine follow-up**	Low risk **CT at 3–6 months** *(then consider CT at 18–24 months)*	Low risk **CT at 3–6 months** *(then consider CT at 18–24 mos.)*
	Unknown risk **No routine follow-up** *or* **Optional CT at 12 months** *per risk*	Unknown risk **CT at 3–6 months** *(then consider CT at 18–24 mos.) per risk*	Unknown risk **CT at 3–6 months** *(then consider CT at 18–24 mos.) per risk*
	High risk **Optional CT at 12 months** *Stronger consideration if suspicious nodule morphology and/or upper lobe location*	High risk **CT at 3–6 months** *(then CT at 18–24 mos.)*	High risk **CT at 3–6 months** *(then CT at 18–24 mos.)*

Subsolid

	<6 mm	≥6mm
Single ground glass	**No routine follow-up**	**CT at 6–12 months** *(then CT every 2 years until 5 years)*
Single part solid	**No routine follow-up**	**CT at 3–6 months** *(then ann. CT ×5 years if unchanged & solid part <6mm)*
Multiple	**CT at 3–6 months** *(if stable, consider CT at 2 and 4 years)*	**CT at 3–6 months** *(then subsequent management based on the most suspicious nodule)*

Fleischner Society 2017 Guidelines for Management of Incidentally Detected Pulmonary Nodules in Adults

A: Solid Nodules*

	Size			
Nodule Type	<6 mm (<100 mm^3)	6–8 mm (100–250 mm^3)	>8 mm (>250 mm^3)	Comments
Single				
Low risk†	No routine follow-up	CT at 6–12 months, then consider CT at 18–24 months	Consider CT at 3 months, PET/CT, or tissue sampling	Nodules <6 mm do not require routine follow-up in low-risk patients (recommendation 1A).
High risk†	Optional CT at 12 months	CT at 6–12 months, then CT at 18–24 months	Consider CT at 3 months, PET/CT, or tissue sampling	Certain patients at high risk with suspicious nodule morphology, upper lobe location, or both may warrant 12-month follow-up (recommendation 1A).
Multiple				
Low risk†	No routine follow-up	CT at 3–6 months, then consider CT at 18–24 months	CT at 3–6 months, then consider CT at 18–24 months	Use most suspicious nodule as guide to management. Follow-up intervals may vary according to size and risk (recommendation 2A).
High risk†	Optional CT at 12 months	CT at 3–6 months, then at 18–24 months	CT at 3–6 months, then at 18–24 months	Use most suspicious nodule as guide to management. Follow-up intervals may vary according to size and risk (recommendation 2A).

B: Subsolid Nodules*

	Size		
Nodule Type	<6 mm (<100 mm^3)	≥6 mm (>100 mm^3)	Comments
Single			
Ground glass	No routine follow-up	CT at 6–12 months to confirm persistence, then CT every 2 years until 5 years	In certain suspicious nodules < 6 mm, consider follow-up at 2 and 4 years. If solid component(s) or growth develops, consider resection. (Recommendations 3A and 4A).
Part solid	No routine follow-up	CT at 3–6 months to confirm persistence. If unchanged and solid component remains <6 mm, annual CT should be performed for 5 years.	In practice, part-solid nodules cannot be defined as such until ≥6 mm, and nodules <6 mm do not usually require follow-up. Persistent part-solid nodules with solid components ≥6 mm should be considered highly suspicious (recommendations 4A-4C)
Multiple	CT at 3–6 months. If stable, consider CT at 2 and 4 years.	CT at 3–6 months. Subsequent management based on the most suspicious nodule(s).	Multiple <6 mm pure ground-glass nodules are usually benign, but consider follow-up in selected patients at high risk at 2 and 4 years (recommendation 5A).

Note.—These recommendations do not apply to lung cancer screening, patients with immunosuppression, or patients with known primary cancer.

* Dimensions are average of long and short axes, rounded to the nearest millimeter.

† Consider all relevant risk factors (see Risk Factors).