

Original Article

Low risk of malignancy related to prostate-specific membrane antigen-PET/CT-positive thyroid incidentalomas

Sama Alsofi¹, Therese Ovesen¹, Kasper Drimer Berg², Ali Abood¹ & Ditte Hermansen¹

1) Department of Otorhinolaryngology, Regional Hospital Gødstrup, 2) Department of Urology, Regional Hospital Gødstrup, Denmark

Dan Med J 2026;73(9):A02260147. doi: 10.61409/A02260147

ABSTRACT

INTRODUCTION. With the widespread use of prostate-specific membrane antigen (PSMA)-PET/CT in prostate cancer management, incidental thyroid findings are occasionally detected. However, the malignancy risk associated with focal PSMA-PET/CT-positive thyroid incidentalomas remains unclear, and most patients are therefore referred to a fast-track cancer pathway. This study aimed to determine the incidence and malignancy risk of focal PSMA-PET/CT-positive thyroid incidentalomas and to assess whether routine fast-track referral is justified.

METHODS. In this retrospective cohort study, all PSMA-PET/CTs performed between January 2019 and December 2023 were reviewed. Patients with focal thyroid PSMA uptake were included. Medical records were examined to collect data on imaging and subsequent evaluation at an ear, nose and throat department, including ultrasonography, thyroid function tests, cytology, histopathology and follow-up. The malignancy risk was determined based on cytological and histopathological findings as well as clinical follow-up.

RESULTS. Among 1,477 PSMA-PET/CTs, thyroid uptake was identified in 80 (5.4%), of which 42 (2.8%) were focal. Forty patients with focal uptake were included in the study. Malignancy was confirmed in one patient, corresponding to an overall malignancy rate of 2.5%. Histopathology revealed papillary thyroid carcinoma.

CONCLUSIONS. Focal PSMA-PET/CT-positive thyroid incidentalomas are uncommon and associated with a low risk of clinically relevant malignancy. A less aggressive diagnostic approach, therefore, appears justified.

FUNDING. None.

TRIAL REGISTRATION. Not relevant.

Prostate cancer (PCa) is the most diagnosed malignancy among men in Northern Europe, with age-standardised incidence rates exceeding 100 per 100,000 in Denmark, Sweden and Norway [1].

Prostate-specific membrane antigen (PSMA) PET/CT is widely used for staging and management of PCa, particularly in higher-risk disease and in biochemical recurrence, improving diagnosis and treatment decisions [2]. As its use expands, incidental PSMA uptake unrelated to PCa is occasionally recognised, including thyroid incidentalomas of uncertain clinical relevance.

Currently, no national Danish clinical guideline addresses the management of PSMA-PET/CT-positive thyroid incidentalomas. The national guideline on thyroid cancer from the Danish Head and Neck Cancer Group (DAHANCA) was recently updated [3]. Although this guideline does not cover PSMA-PET/CT-positive

incidentalomas, it provides thorough recommendations on the management of PET-positive incidentalomas encountered by the ^{18}F -fluorodeoxyglucose (FDG) tracer. According to the guideline, focal FDG-PET/CT-positive thyroid incidentalomas should be referred for evaluation in a fast-track cancer pathway due to the risk of malignancy. A systematic review of FDG-PET-positive incidentalomas reported a malignancy rate of 34.8% [4], whereas a prospective Danish cohort study demonstrated a malignancy rate of 24% in focal FDG-positive thyroid lesions [5].

Although data are conflicting and evidence is limited, early data on PSMA-PET/CT-positive thyroid incidentalomas suggest malignancy rates comparable to those of FDG-PET-positive thyroid incidentalomas [6]. Accordingly, most ear, nose and throat (ENT) departments refer patients with focal PSMA-PET/CT-positive thyroid incidentalomas for fast-track workup. Diffuse PSMA uptake, in contrast, is generally associated with inflammatory rather than malignant changes [7], and a 2022 systematic review and meta-analysis found no malignant cases among patients with diffuse uptake [8].

However, the malignancy risk of focal PSMA-PET/CT-positive thyroid incidentalomas remains unclear, and it is uncertain whether fast-track referral is justified. Thus, the aim of this study was to assess the incidence of focal PSMA-PET/CT-positive thyroid incidentalomas and their associated malignancy risk in an unselected cohort of patients undergoing PSMA-PET/CT for suspected PCa and to evaluate the need for fast-track workup.

Methods

Study design and population

This retrospective cohort study evaluated all PSMA-PET/CTs performed at the Department of Nuclear Medicine, Gødstrup Hospital, from 1 January 2019 to 31 December 2023. Only patients with PSMA uptake in the thyroid gland were further reviewed. The inclusion criterion was patients with focal PSMA uptake in the thyroid gland. Patients with diffuse (non-focal) uptake or patients without subsequent ENT referral were excluded. Indications for PSMA-PET/CT were either initial staging of newly diagnosed men with intermediate or high-risk PCa or biochemical recurrence after curatively intended treatment. During the study period, the tracer was changed from ^{68}Ga to ^{18}F .

Prostate-specific membrane antigen-PET/CT evaluation

Initial assessment of thyroid PSMA uptake pattern and intensity was based on the interpreting nuclear medicine physicians' report. Uptake was classified as focal or diffuse, and then as mild, moderate or intense, based on subjective assessment without predefined criteria. A CT correlate was also noted.

PSMA uptake patterns were routinely re-evaluated at the weekly PCa multidisciplinary team meetings and further reviewed by an experienced head and neck surgeon if needed. Cases of focal uptake later reclassified as non-focal were excluded.

Ear, nose and throat evaluation

Patients referred for ENT evaluation were assessed according to the national DAHANCA protocol for focal FDG-PET/CT-positive thyroid nodules. The workup included a full ENT examination with flexible endoscopy of the upper airways, blood tests including thyroid-stimulating hormone (TSH), T3, T4, thyroid peroxidase antibodies (TPO), calcitonin, calcium++, cervical ultrasonography, fine-needle aspiration (FNA) and/or thyroid scintigraphy when indicated.

Thus, FNA was performed for nodules ≥ 10 mm, except when a thyroid scintigraphy was indicated. Scintigraphy was reserved for solitary nodules with suppressed TSH (< 0.3 mU/l) and no red flag features such as rapid growth, suspected metastases, impaired vocal cord mobility or EU Thyroid Imaging Reporting and Data System

(TIRADS) 5 classification [9]. If scintigraphy demonstrated a hypofunctioning nodule, FNA was performed. Cytology was evaluated according to the Bethesda System by thyroid cytopathologists [10]. If FNA revealed a malignant or suspicious cytology (Bethesda III–VI), a hemithyroidectomy was recommended. Nodules with benign cytology (Bethesda II) were followed. Non-diagnostic cytology led to repeat FNA, whereas persistent non-diagnostic results triggered recommendation of hemithyroidectomy. Surgery was also indicated for suspicious EU-TIRADS features, considerable growth (> 3 mm in diameter) or new concerning symptoms during follow-up. Patients without these findings were discharged with a benign outcome.

Data collection & analysis

Electronic medical records were reviewed for demographics, imaging, referral data, PCa characteristics, laboratory results, pathology reports and follow-up duration. The incidence of PSMA thyroid incidentalomas was determined, patient pathways were mapped and malignancy risk was assessed based on histopathology and clinical outcomes.

This study was conducted as a quality study and was approved by the Hospital Board of Directors.

Statistics

Data are presented as number/percentages and mean/standard deviation or median/range according to the criteria for normal distribution.

The 95% CI for the malignancy rate was calculated using the Wilson score interval.

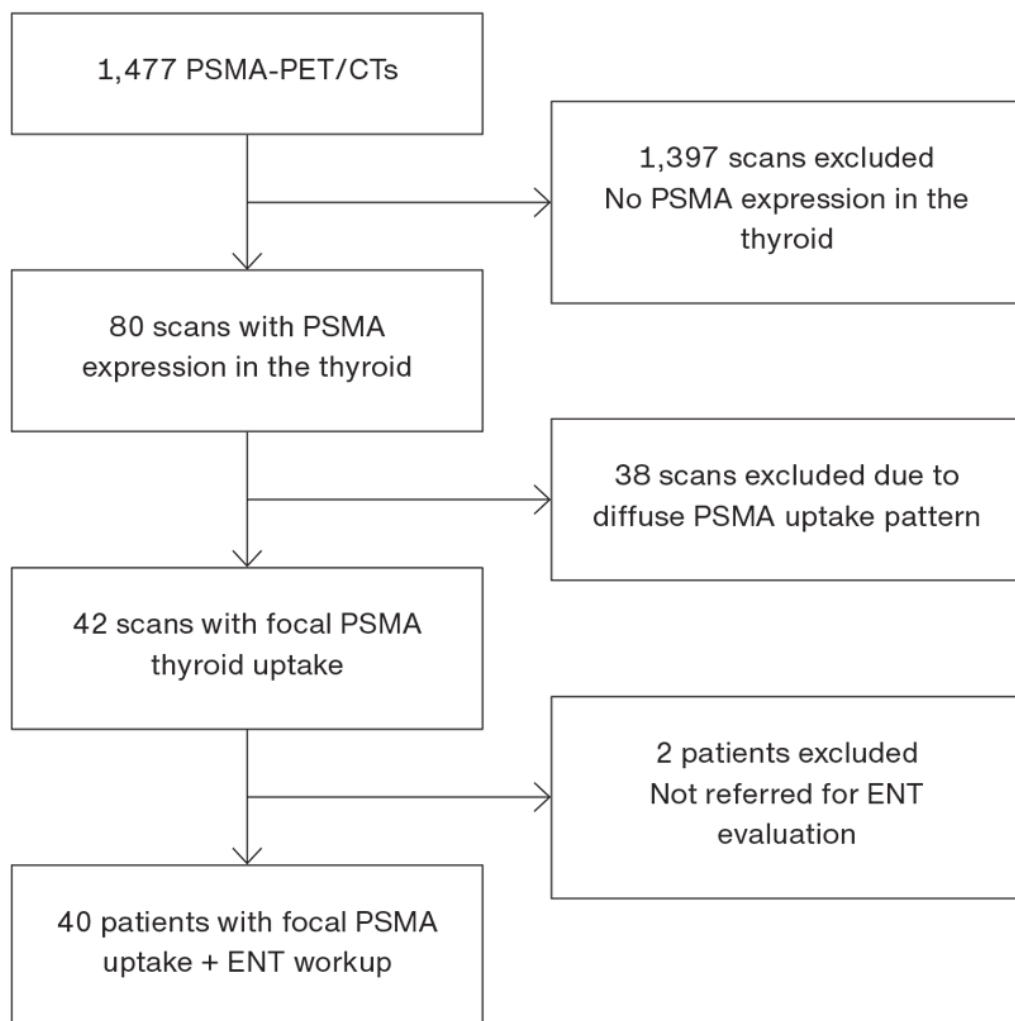
Trial registration: not relevant.

Results

Patient characteristics

In total, 1,477 PSMA-PET/CT scans were performed in 1,376 patients during the five-year study period. Thyroid PSMA uptake was present in 80 scans (5.4%), showing a diffuse uptake in 38 (2.6%) and a focal uptake in 42 (2.8%). Forty male patients were included in the study. See **Figure 1**.

FIGURE 1 Flow chart of patient inclusion. The inclusion criteria were patients with focal thyroid prostate-specific membrane antigen (PSMA) uptake undergoing ear, nose and throat (ENT) evaluation. The exclusion criteria were absent or diffuse PSMA uptake or focal uptake without ENT referral. Two patients were not referred because their findings were deemed clinically insignificant in the light of metastatic prostate cancer.



Baseline characteristics, including age, indication for PSMA PET/CTs, tracer use and PCa classification, are shown in **Table 1**.

TABLE 1 Baseline characteristics.

Age, median (range), yrs	70 (59-81)
<i>Indication for PSMA PET/CT, n (%)</i>	
Primary staging	36 (90)
Biochemical recurrence	4 (10)
<i>Tracer used for PSMA PET/CT, n (%)</i>	
¹⁸ F-PSMA	28 (70)
⁶⁸ Ga-PSMA	12 (30)
<i>Clinical prostate cancer stage, n (%)</i>	
cTx: no recurrence	4 (10)
cT1	9 (22.5)
cT2a/b	10 (25)
cT2c	6 (15)
cT3a	4 (10)
cT3b	7 (17.5)
<i>Lymph node metastases on PET/CT?, n (%)</i>	
Yes	12 (30)
No	28 (70)
<i>Distant metastases on PET/CT?, n (%)</i>	
Yes	8 (20)
No	32 (80)

PSMA = prostate-specific membrane antigen.

Prostate-specific membrane antigen-PET/CT & ear, nose and throat workup

The PSMA thyroid uptake pattern was predominantly a single focal lesion (92.5%), with moderate-to-intense uptake in 92.5% of cases, as shown in Table 2.

TABLE 2 Prostate-specific membrane antigen-PET/CT and ear, nose and throat workup results.

<i>PSMA PET/CT findings, n (%)</i>	
Single focal uptake	37 (92.5)
2 focal uptakes	1 (2.5)
Multiple focal uptakes	2 (5)
Subtotal	40
<i>PSMA uptake intensity, n (%)</i>	
Mild	3 (7.5)
Moderate	22 (55)
Intense	15 (37.5)
Subtotal	40
<i>CT correlate, n (%)</i>	
Present	18 (45)
Uncertain	8 (20)
Absent	12 (30)
Not available: PET only	2 (5)
Subtotal	40
<i>Thyroid function: TSH, T3, T4, n (%)</i>	
Normal	33 (82.5)
Subclinical hyperthyroidism	3 (7.5)
Hyperthyroidism	1 (2.5)
Not reported	3 (7.5)
Subtotal	40
<i>Referral & ENT workup time, median (range), days^a</i>	
Referral to ENT after PSMA-PET/CT	8 (3-173)
Time to initial ENT consult	3 (0-12)
<i>Ultrasound: nodule size, n (%)^b</i>	
No correlate	3 (7.5)
Uncertain	3 (7.5)
< 10 mm	8 (20)
10-15 mm	14 (35)
15-20 mm	7 (17.5)
20-25 mm	3 (7.5)
25-30 mm	2 (5)
Subtotal	40 (100)
<i>EU-TIRADS classification, n (%)</i>	
No adenoma	4 (10.0)
EU-TIRADS 2	1 (2.5)
EU-TIRADS 3	5 (12.5)
EU-TIRADS 4	16 (40.0)
EU-TIRADS 5	5 (12.5)
EU-TIRADS not stated	9 (22.5)
Subtotal	40 (100)
<i>Cytology, n (%)</i>	
Bethesda I: non-diagnostic	6 (20.7)
Bethesda II: benign	17 (58.6)
Bethesda III: atypia	0
Bethesda IV: follicular neoplasm	5 (17.2)
Bethesda V: suspicious	0
Bethesda VI: malignant	1 (3.4)
Total FNAs	29 (100)
<i>Hemithyroidectomy outcome, n (%)</i>	
Malignant	1 (11.1)
Benign	8 (88.9)
Total hemithyroidectomies	9 (100)

ENT = ear, nose and throat; FNA = fine-needle aspiration; PCa = prostate cancer; PSMA = prostate-specific membrane antigen; TIRADS = Thyroid Imaging Reporting and Data System.

a) The median time to initial ENT consultation was 3 days, with 95% seen within 7 days; 1 of the 2 patients seen later was postponed due to PCa surgery.

b) The reported nodule size refers to the shortest axis.

Ultrasound was performed in all 40 patients. An ultrasonographic correlate was found in 34 patients (85%), whereas a convincing CT correlate was present only in 18 patients (45%). Twenty-one patients (52.5%) had suspicious ultrasonographic features defined as EU-TIRADS 4 or 5. FNA was performed in 29 patients, raising suspicion (Bethesda III-VI) in six patients (15%). Nine patients (22.5%) underwent diagnostic hemithyroidectomy, and malignancy was confirmed in one patient (2.5%).

FNA was not performed in the remaining 11 patients due to absence of visible nodule identified on ultrasound at the initial ENT assessment (three cases), nodule size < 10 mm without suspicious features (four cases), multinodular goiter without a dominant lesion (one case), intrathoracic lesion and thus inaccessible for FNA

(two cases) or scintigraphy revealing a “hot” area corresponding to subclinical hyperthyroidism (one case).

Diagnostic hemithyroidectomy was performed mainly due to these findings: four (44%) with FNA results consistent with Bethesda IV, one (11%) with an intrathoracic nodule inaccessible for FNA, two (22%) with growth of a nodule with previously benign cytology, one (11%) with repeat non-diagnostic FNA results and one (11%) with malignant cytology (Bethesda VI).

In ten patients, neither FNA nor histological analysis was performed.

Follow-up

Follow-up was defined as the interval from the PSMA PET/CT to discharge from the ENT department, either after 1) benign findings (n = 26), 2) diagnostic hemithyroidectomy (n = 9), 3) death (n = 2) or 4) patients lost to follow-up (n = 2). This adds up to 39 patients.

One additional patient (Bethesda II) is still under observation, with 523 days of ongoing follow-up.

Of the two patients who died, one (Bethesda I) died from sepsis 106 days after the scan with no signs of thyroid cancer. The second patient (Bethesda II) died from disseminated PCa after 281 days.

Both patients who were lost to follow-up had Bethesda II cytology and were asymptomatic.

Among patients who did not undergo surgery, follow-up duration varied widely. Three patients without an ultrasonographic correlate were discharged after the initial ENT evaluation without further follow-up; none had a convincing CT correlate. Four patients with an ultrasound nodule measuring < 1 cm, without suspicious features, and not undergoing FNA were followed for a median of 340 days and were subsequently discharged as having benign findings. The nodules resolved completely in two patients and remained stable in size in the other two.

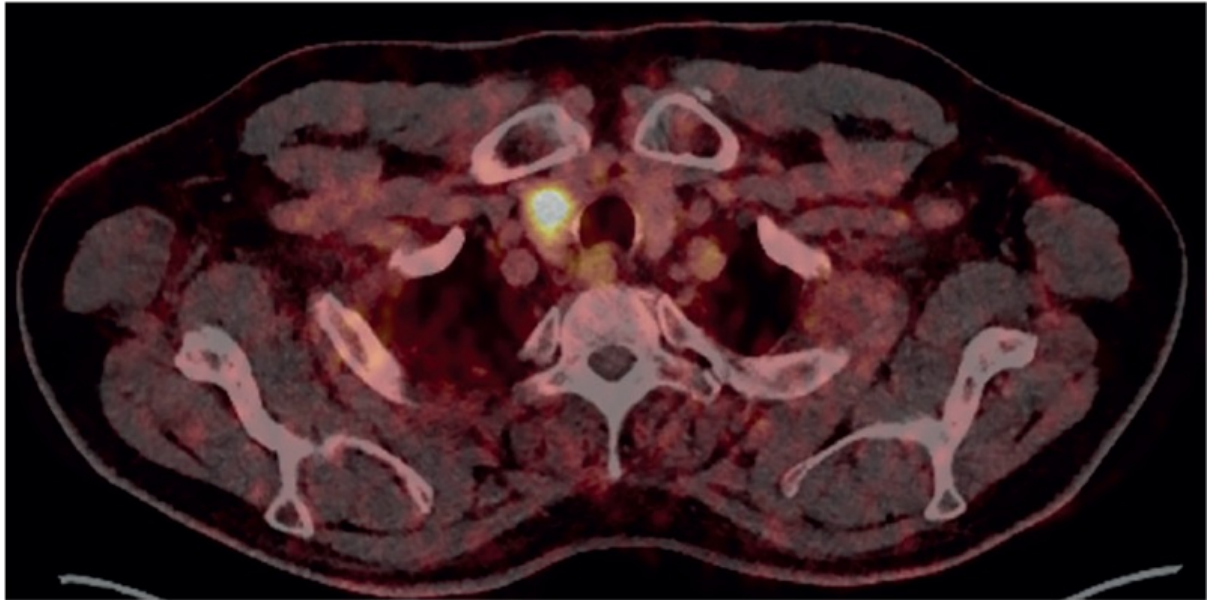
The patients with Bethesda II cytology had a median follow-up of 349 days before discharge. Two patients underwent hemithyroidectomy due to growth/compressive symptoms. Patients with Bethesda I cytology who did not undergo hemithyroidectomy had a median follow-up period of 454 days; one of six patients with Bethesda I underwent hemithyroidectomy. One patient with Bethesda IV cytology declined hemithyroidectomy and was followed for 1,713 days before discharge, whereas the remaining four Bethesda IV patients underwent hemithyroidectomy.

Two patients had intrathoracic adenomas; one declined hemithyroidectomy and was followed for 1,061 days before discharge; the other underwent hemithyroidectomy.

Rate of malignancy

The rate of malignancy in this cohort was 1/40 (2.5%; 95% CI: 0.04-12.9%). The single malignant case was histologically confirmed as papillary thyroid carcinoma (PTC). The focal PSMA-PET/CT uptake is shown in **Figure 2**. Additional information regarding the malignant case is provided in [Supplementary table S1](#).

FIGURE 2 The focal prostate-specific membrane antigen-PET/CT uptake.



Discussion

In our cohort, the incidence of focal thyroid uptake on PSMA PET/CT was 2.8%, consistent with a 2025 systematic review and meta-analysis reporting 0.5-6.2% across seven studies [11].

With 40 patients, our study represents the second-largest cohort reported to date, second only to Piek et al. (43 patients) [12], whereas most other studies included only 6-7 patients [13-17].

A major strength of our study is the near-complete case inclusion. We reviewed all PSMA PET/CTs over five years and included 40 of 42 patients with focal uptake, supporting a reliable malignancy risk estimate.

Unlike many previous studies that used variable assessments and follow-up, all patients underwent a uniform diagnostic workup.

We observed a malignancy rate of 2.5% among focal PSMA-positive thyroid incidentalomas. This is slightly lower than the 7% reported by Piek et al. [12] and notably lower than the 11% reported by Koçar et al. [18]. The latter study relied partly on cytology for malignancy classification. Two of their four malignant cases were diagnosed solely on FNA with Bethesda VI cytology. While Bethesda VI carries a malignancy risk of 95.7%, it is not absolute, and reliance on cytology alone may inflate malignancy estimates [19].

Malignancy risks vary substantially across small cohorts. Two cohorts of six patients each reported no malignant cases [14, 17], whereas others reported rates of 28.5% and 16.6% [15, 16]. Another study reporting a malignancy rate of 16.6% based solely on cytology similarly raises concerns about overestimation [13].

This study has several limitations. Its retrospective single-centre design may introduce information bias and limit generalisability. In addition, not all cases had histopathological verification. The small cohort size ($n = 40$) reduces statistical power and limits the ability to draw firm conclusions regarding malignancy risk. Finally,

benign FNA findings may miss small malignant lesions due to sampling error or microcarcinomas.

Nevertheless, our study included nine hemithyroidectomies – the highest number of surgically validated cases reported in this context – supplemented by long-term clinical follow-up. While recognising that neither cytology nor follow-up alone can exclude malignancy with complete certainty, this combined approach provides a robust assessment of clinically significant malignancy.

Altogether, our data suggest that the clinically significant malignancy risk is likely at the lower end of the range reported across previous studies.

The only malignancy identified in our cohort was PTC, which is consistent with findings from prior studies in which PTC was the predominant histological subtype. PTC generally carries an excellent prognosis, with five-year relative survival for nonlocalised disease improving from 83.5% in 2000-2004 to 92.3% in 2010-2015 [20].

All patients had PCa, either with unfavourable intermediate- or high-risk disease or with biochemical recurrence after curatively intended treatment. Despite this, all were referred through a fast-track cancer pathway, with a median time of three days to the initial ENT consultation.

Given the low malignancy risk observed, the typically favourable prognosis of PTC and the competing treatment priorities in patients with advanced PCa, our findings highlight a considerable risk of overtreatment.

Patients with focal PSMA uptake in thyroid incidentalomas should not routinely be referred to fast-track cancer pathway in the absence of additional suspicion of thyroid malignancy. Instead, priority should be given to PCa management. However, national studies are needed to confirm the safety and generalisability of this approach.

Conclusions

Focal PSMA uptake in thyroid incidentalomas is uncommon and carries a low risk of clinically relevant malignancy. Patients should not routinely be referred to a fast-track cancer pathway, and priority should be given to PCa management to avoid unnecessary interventions.

Correspondence *Sama Alsofi*. E-mail: Samaalsofi@gmail.com

Accepted 19 June 2026

Published 18 August 2026

Conflicts of interest TO reports financial support from or interest in Gyldendals Forlag, Fadl's Forlag and Astra Zeneka. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. These are available together with the article at ugeskriftet.dk/dmj

References can be found with the article at ugeskriftet.dk/dmj

Cite this as Dan Med J 2026;73(9):A02260147

doi 10.61409/A02260147

Open Access under Creative Commons License [CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)

Supplementary material https://content.ugeskriftet.dk/sites/default/files/2026-06/a02260147_supplementary.pdf

REFERENCES

1. Culp MB, Soerjomataram I, Efsthathiou JA, et al. Recent Global Patterns in Prostate Cancer Incidence and Mortality Rates. Eur Urol. 2020;77(1):38-52. <https://doi.org/10.1016/j.eururo.2019.08.005>

2. Stroomberg HV, Brasso K, Røder A. The Influence of the Introduction of PSMA-PET/CT in Danish Men Diagnosed with Prostate Cancer. *Clin Genitourin Cancer*. 2025;23(5):102404. <https://doi.org/10.1016/j.clgc.2025.102404>
3. Danish Head and Neck Cancer Group (DAHANCA). Behandling af thyroideacancer. Version FORMS2005. DAHANCA, 2022. www.dahanca.dk
4. Soelberg KK, Bonnema SJ, Brix TH, Hegedüs L. Risk of malignancy in thyroid incidentalomas detected by 18F-fluorodeoxyglucose positron emission tomography: a systematic review. *Thyroid*. 2012;22(9):918-925. <https://doi.org/10.1089/thy.2012.0005>
5. Abdel-Halim CN, Rosenberg T, Bjørndal K, et al. Risk of Malignancy in FDG-Avid Thyroid Incidentalomas on PET/CT: A Prospective Study. *World J Surg*. 2019;43(10):2454-2458. <https://doi.org/10.1007/s00268-019-05043-6>
6. Bertagna F, Albano D, Giovannella L, et al. ⁶⁸Ga-PSMA PET thyroid incidentalomas. *Hormones (Athens)*. 2019;18(2):145-149. <https://doi.org/10.1007/s42000-019-00106-8>
7. Bychkov A, Vutrpongwatana U, Tepmongkol S, et al. PSMA expression by microvasculature of thyroid tumors - Potential implications for PSMA theranostics. *Sci Rep*. 2017;7(1):5202. <https://doi.org/10.1038/s41598-017-05481-z>
8. Godê KKdS, Mourato FA, Sales AfDf, et al. Thyroid incidentalomas in PSMA PET/CT: a systematic review and meta-analysis. *Clin Transl Imaging*. 2023;11:263-269. <https://doi.org/10.1007/s40336-022-00537-1>
9. Russ G, Bonnema SJ, Erdogan MF, et al. European Thyroid Association Guidelines for Ultrasound Malignancy Risk Stratification of Thyroid Nodules in Adults: The EU-TIRADS. *Eur Thyroid J*. 2017;6(5):225-237. <https://doi.org/10.1159/000478927>
10. Cibas ES, Ali SZ. The 2017 Bethesda System for Reporting Thyroid Cytopathology. *Thyroid*. 2017;27(11):1341-1346. <https://doi.org/10.1089/thy.2017.0500>
11. Iacovitti CM, Albano D, Rizzo A, et al. Meta-Analysis on the Prevalence and Significance of Incidental Findings in the Thyroid Gland Using Other PET Radiopharmaceuticals Beyond [18F]FDG. *Pharmaceuticals (Basel)*. 2025;18(5):723. <https://doi.org/10.3390/ph18050723>
12. Piek MW, de Vries LH, Donswijk ML, et al. Retrospective analysis of PSMA PET/CT thyroid incidental uptake in adults: incidence, diagnosis, and treatment/outcome in a tertiary cancer referral center and University Medical Center. *Eur J Nucl Med Mol Imaging*. 2022;49(7):2392-2400. <https://doi.org/10.1007/s00259-022-05679-y>
13. Osman MM, Iravani A, Hicks RJ, Hofman MS. Detection of Synchronous Primary Malignancies with ⁶⁸Ga-Labeled Prostate-Specific Membrane Antigen PET/CT in Patients with Prostate Cancer: Frequency in 764 Patients. *J Nucl Med*. 2017;58(12):1938-1942. <https://doi.org/10.2967/jnumed.117.190215>
14. Keidar Z, Gill R, Goshen E, et al. ⁶⁸Ga-PSMA PET/CT in prostate cancer patients - patterns of disease, benign findings and pitfalls. *Cancer Imaging*. 2018;18(1):39. <https://doi.org/10.1186/s40644-018-0175-3>
15. Gossili F, Petersen LJ, Zacho HD. The frequency of thyroid incidental findings and risk of malignancy detected by ⁶⁸Ga-labeled prostate-specific membrane antigen PET/CT in prostate cancer. *Hell J Nucl Med*. 2020;23(3):240-245. <https://doi.org/10.1967/s002449912202>
16. Donswijk ML, Piek MW, Cheung Z, et al. Incidence of PSMA PET thyroid incidentaloma depends on analysis method and tracer. *Eur Radiol*. 2023;33(5):3377-3385. <https://doi.org/10.1007/s00330-023-09492-5>
17. Perry E, Talwar A, Sharma S, et al. Non-prostate cancer tumours: incidence on ¹⁸F-DCFPyL PSMA PET/CT and uptake characteristics in 1445 patients. *Eur J Nucl Med Mol Imaging*. 2022;49(9):3277-3288. <https://doi.org/10.1007/s00259-022-05721-z>
18. Koçar &Ç, Özcan PP, Koç ZP, et al. Retrospective analysis of thyroid incidentalomas detected by [⁶⁸Ga]Ga-PSMA-11 PET/CT. *Endocrine*. 2024;86(1):302-309. <https://doi.org/10.1007/s12020-024-03847-8>
19. Madsen SH, Jespersen ML, Bonnema SJ, Rolighed L. Validation of the Bethesda System for Reporting Thyroid Cytopathology in a Danish tertiary centre. *Dan Med J*. 2024;71(6):A10230677. <https://doi.org/10.61409/A10230677>
20. Sørensen SM, Munk C, Maltesen T, et al. Trends in papillary thyroid cancer mortality in Denmark according to stage and education. *Clin Endocrinol (Oxf)*. 2024;101(6):573-579. <https://doi.org/10.1111/cen.15119>