How to Read Your PET-CT Radiology Report

Your healthcare provider (usually a doctor, nurse practitioner, or physician assistant) sometimes uses medical imaging tests to diagnose and treat diseases. A Nuclear radiologist (http://www.radiologyinfo.org) is a doctor who supervises these exams, reads and interprets the images, and writes a report for your healthcare provider. This report may contain medical terminology and complex information. If you have any questions, be sure to talk to your provider or ask if you can speak to a radiologist (not all imaging centers make their radiologists available for patient questions).

What is PET-CT commonly used for?

Doctors typically use this Imaging exam to help diagnose cancer. They use it to:

- detect cancer and/or make a diagnosis.
- determine whether cancer has spread in the body.
- assess the effectiveness of treatment.
- determine if a cancer has returned after treatment.
- evaluate prognosis.

Sometimes, Doctors use PET-CT for non-cancer conditions to:

- assess tissue metabolism and viability.
- determine the effects of a heart attack, or myocardial infarction (http://www.radiologyinfo.org) , on areas of the heart.
- identify any areas of the heart muscle that would benefit from angioplasty (http://www.radiologyinfo.org) or coronary artery bypass surgery (http://www.radiologyinfo.org) (in combination with a myocardial perfusion scan (http://www.radiologyinfo.org)).
- evaluate brain abnormalities, such as tumors, memory disorders, or seizures
- map normal human brain and heart function.

For more information, see the PET-CT page (https://www.radiologyinfo.org/en/info/pet) .

On the day of your scan:
1. A technologist will place an IV in your arm.
2. A technologist will inject a small amount of the radiotracer into your bloodstream.
3. You will wait for about an hour while the radiotracer circulates and is “taken up” by some normal and any abnormal tissues.
4. You will then lie down on a scanning table on your back. The table slides into a large scanner shaped like a doughnut.
5. The scan usually takes about 30 minutes

Sections of the PET-CT Report

Type of exam

This section usually shows the date, time, and type of exam. This is usually dictated by your symptoms or needs.

Example:

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• FDG PET-CT performed on January 10th, 2026.

History/Reason for exam

This section usually lists the information that your ordering provider has listed for the radiologist when they requested your exam. It allows your provider to explain what symptoms you are having and why they are ordering the radiology test. It also contains the treatments you had for the condition, which is important to explain some findings on the scan. This helps the Radiologist accurately interpret your test and focus the report on your symptoms and past medical history. Sometimes the radiologist who reads your exam will also add information that they find in your chart or in the forms that you fill out before your imaging test.

Example:

• 64-year-old male with a history of colon cancer, new cough.

Comparison/Priors

If you have had relevant prior imaging exams, the radiologist will compare them to the new imaging exam. If so, the radiologist will list them here. Comparisons usually involve exams of the same body area and exam type. It is always a good idea to get any prior imaging exams from other hospitals/facilities and give them to the radiology department where you are having your test. Having these older exams can be very helpful to the radiologist. In some cases, simply having your prior test available will make a difference in what the radiologist recommends if they see something on your scan. The prior exam can help show if a previous finding is unchanged or if there is a new finding.

Example:

- Comparison is made to a PET-CT scan performed August 24, 2024

Technique

This section describes how the exam was done. Because this section is used for documentation purposes, it is not typically useful for you or your doctor. However, it can be very helpful to a radiologist for any future exam if needed. It contains amount of the radiotracer injected, time between the injection and scan acquisition. This section also provides your blood sugar level at the time of scan for most of the PET exams.

Examples:

- A whole-body PET/CT scan from the skull base to the midthigh was performed, along with noncontrast low-Kvp CT scan for attenuation correction and anatomic correlation. This non-optimized CT scan was reviewed in brain, lung, bone, and soft tissue windows
- Dose: 10.07 mCi F-18 FDG IV IV Injection Site: RAC Time of Injection: 0955 Total Elapsed Time: 55 MIN DLP: 502 mGy cm. Pre-injection Glucose Level: 133 mg/dl, Patient weight: 184 lbs. Height: 61 in. Diabetic: NO

Findings

This section lists details of what was seen in the scan, using medical terminology. It may include both minor, harmless findings and more significant ones in each area of the body in the exam.

Your radiologist notes whether they think the area is normal, abnormal, or potentially abnormal. Sometimes an exam covers an area of the body but does not discuss any findings. This usually means that the radiologist looked but did not find any problems to tell your doctor about. Some radiologists will report things in paragraph form, while others use a reporting style where each organ or region of the body is listed as a line with the findings. If the radiologist does not see anything concerning it may say “normal” or “unremarkable.”

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Examples:

- Head/Neck: CT images through the head demonstrate no gross mass effect or hemorrhage within the brain. The paranasal sinuses are clear. Images through the neck demonstrate no pathologically enlarged lymphadenopathy. No abnormal uptake is seen within head or neck.
- Chest: The lungs are clear. There are no suspicious pulmonary nodules, masses, pleural effusion, or pneumothorax. No FDG avid adenopathy is seen within the mediastinum, hila, or axilla. No abnormal tracer uptake is seen within the thorax.
- Abdomen/Pelvis: There is no solid organ or hollow viscus lesion. No malignant adenopathy noted. Tracer activity in the GI and GU tracts is within normal. No abnormal uptake is seen within the abdomen or pelvis.
- Musculoskeletal: Images through the bones demonstrate no focal osseous lesion or abnormal uptake.

Impression/ Conclusion:

In this section, the radiologist summarizes the findings and reports the most important findings that they see and possible causes for those findings. It also has recommendations for any follow-up actions. This section offers the most important information for decision-making. Therefore, it is the most important part of the radiology report for you and your healthcare team.

For an abnormal finding, the radiologist may recommend:

- other imaging tests that can help better assess the finding or getting follow up imaging to again examine the finding after an optimal period.
- biopsy.
- combining the finding with clinical symptoms or laboratory test results.
- comparing the findings with any other imaging studies that the radiologist interpreting your test does not have access to. This is common when you have imaging tests done at different facilities or hospitals.

For a potentially abnormal finding, the radiologist may make any of the above recommendations.

Sometimes the report does not answer the clinical question, and more exams may be needed. More exams may be necessary to follow up on a suspicious or questionable finding.

Examples:

• No findings on the current PET-CT to account for the patient's clinical complaint of cough.
• There is a new 6 mm lung nodule which is indeterminate, as it is below the size threshold for PET-CT characterization (cannot be definitively diagnosed by the study).
• RECOMMENDATION: Given the patient's history of colon cancer, a short interval CT of the chest is recommended in 6-8 weeks to monitor the size of the nodule for change or resolution.

Incidental Findings

When your doctor orders a radiology exam for you, they are hoping to answer a specific diagnostic question or to eliminate a diagnostic possibility. An x-ray, for example, is one of the quickest ways to determine if the sore toe you stubbed is broken or if it is merely bruised.

Radiology exams can capture information that may be unexpected but important, nonetheless. This information, called an incidental finding, may have no bearing on your health at all. Or it could be concerning enough to your doctor to prompt them to investigate.

Some incidental findings that do not need any further investigations like:

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- Diffuse bowel uptake can be seen with patients taking metformin.
- Small gall stones, thyroid nodules, kidney stones, without obstruction, small adrenal nodules, colonic diverticula (small outpouchings in colon wall), without any inflammation, etc.

Sometimes, there can be unrelated important findings that would need additional exams like- another unrelated cancer, side effects related to some patient's medications, brain bleeds, lung infection, etc.

However, there are many other possible incidental findings that may be included in your report. Talk to your doctor if you have questions.

Incidental findings are not always bad news and may not require any action. For example, that x-ray of your stubbed toe may show that you broke a different toe in the past that is now healed. Incidental findings are just information that may or may not already be known. What you and your doctor do with that information will determine if further testing or treatment is needed.

Additional Information

Once the report is complete, the radiologist signs it, and sends the report to your doctor who will then discuss the results with you. The doctor may upload the report to your patient portal before they call you. If you read the report before talking to your doctor, don't make assumptions about the report's findings. Something that seems to be bad often turns out not to be a cause for concern.

Sometimes, you may have questions about your report that your doctor cannot answer. If so, talk to your facility's imaging staff. Many nuclear radiologists are happy to answer your questions.

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