

PET/CT SCAN INFORMATION FOR PATIENTS WITH DIABETES

WHAT IS AN FDG PET/CT SCAN?

A PET/CT scan is a type of advanced diagnostic imaging test. It combines a PET scan and a CT scan with both exams done at the same time. The PET scan maps out where tracers go to show cells in the body that are overactive. The most common type of PET scan is used to assess the rate of sugar use in cells in the body. Abnormal cells such as cancer grow more rapidly and use more sugar for energy. Normal cells and scar tissue use very little or no sugar in comparison.

For the PET scan, you will be injected with a special sugar called FDG. It is radioactive so that it can be seen using the PET scanner. The scanner will create a 3-D map of your body which will be used by a Nuclear Medicine specialist to answer your doctor's specific question.

The PET portion of the study is combined with a CT scan that is done to localise the FDG to particular body parts and adjust for different body shapes. This CT scan does not replace a regular CT scan - if you have a CT scan scheduled, you will still need to have that as well.

WHY DID YOUR PHYSICIAN ORDER A PET/CT SCAN FOR YOU?

It is an advanced test to determine, depending on the individual, if there is cancer present, where it is located, if it is responding to therapy, or if cancer has come back. It gives different information from diagnostic CT scans, MRI or other imaging studies because it shows how tissues in the body are functioning, not just their structure.

YOUR DIABETES MELLITUS AND THE PET/CT SCAN

- If your blood sugar at the time of the study is too high, we will get a poor-quality scan. If your blood sugar is above 10 mmol/l on the scan day, you may have to be rescheduled.
- Notify us in advance of your appointment if you typically have difficulty keeping blood sugar at or below 10 mmol/l, or if your diabetes is poorly controlled, or if you are on continuous insulin infusion.
- If you take your insulin or diabetes pills too near the FDG injection time, too much FDG will show in the muscles instead of where we need it.
- You may be the best at regulating your own blood sugar levels. Call our department to discuss scheduling the time to obtain the best test result. Please keep your blood sugar below 10 mmol/l for the scan. **Do not take any diabetes medicines or eat within four hours of your appointment time.** You can drink plain water up to the appointment time.
- Watch your diet carefully the day before your scan. Check your blood sugar often, and try to keep it below 10 mmol/l (180 mg/dl) or ideally below 8.3 mmol/l (150 mg/dl).

HOW SHOULD I PREPARE FOR MY PET/CT SCAN AS A DIABETIC?

- Following the correct preparation is very important so we get an accurate test. We may not be able to do the test if all of these steps are not followed.
- **The FDG tracer is transported on the day of your test to Windsor for you specifically. It is very expensive and cannot be used for another patient. If you are unable to keep your appointment you must notify the PET/CT department by calling 519-254-5577 X52395 at least 48 hours prior to your scheduled exam.**
- Bring a list of all of your medications.
- Notify us as soon as possible if you have an infection for which you are being treated.
- If you have claustrophobia, you can ask your doctor for a prescription then fill it and bring it with you to the appointment. You must arrange somebody to drive you home if you take this medicine.
- For the 24 hours before the scan, do not drink coffee, tea, cola drinks and alcohol.
- You should not exercise heavily for 24 hours before the scan. You can do normal activities such as walking.
- You must not eat for at least 4 hours before your scan. This includes avoiding chewing gum, breath mints and candies.
- **If your appointment is scheduled prior to 10:00 am**, from the night before, do not take medicines that contain sugar such as cough syrup. Take your intermediate acting insulin the night before as usual. Intermediate-acting (instead of long-acting) insulin is recommended. Do not take any diabetes medication or insulin the morning of the scan. Have nothing to eat after midnight, and only water to drink. The day of your scan, you may drink plain water only. You may drink water up to the time of your scan. You should be well hydrated. You may take your other non diabetes medicines if they are safe to take on an empty stomach. Don't use other medications you need to take with food.
- **If your appointment is scheduled after 10:00 am**, from the night before, do not take medicines that contain sugar such as cough syrup. Take your intermediate / long acting insulin the night before as usual. You may have an early light breakfast to be finished at least 4 hours before the time of the appointment. It should be a light breakfast with high protein and low carbohydrates e.g. hard-boiled egg or bacon with water, but no toast, no milk, no juice. Then take nothing except plain water until your test is finished. Take your diabetes pills or rapid acting or short acting insulin around the time of your meal as normal. Take your diabetic pills or rapid acting insulin at least 4 hours before your appointment, or take your regular / short acting insulin at least 6 hours before your appointment. Do not use intermediate or long acting insulin the morning of your scan. The day of your scan, you may drink plain water only. You may drink water up to the time of your scan. You should be well hydrated. You may take your other non diabetes medicines if they are safe to take on an empty stomach. Don't use other medications you need to take with food.
- We may ask you to take x-ray contrast by mouth before your scan. We will give you additional directions on how to take it if this is required.
- Please wear warm clothing, even in summer. It is important that you do not get cold in the two hours before we scan you, or the image quality is lower. We will give you extra blankets if needed. Dress in clothes **without** large metal belts, zippers or buttons if possible. Leave jewellery at home.

WHAT WILL OCCUR THE DAY OF MY PET/CT EXAM?

- **If you feel that your blood sugar is too low (heart racing, dizzy, drowsy, headache, sweating) then treat it immediately as you normally would do and tell the technologist upon your arrival.**
- You should plan to be at your appointment for approximately 2 to 3 hours. This allows time for registration, changing, being prepped for the procedure and the scan itself. You may bring a relative or friend for support, but they will have to leave you after a short while.
- You will arrive and be interviewed by our technologist. The technologist will ask you the dates that you have had any surgeries or biopsies within the last three months, or of any chemotherapy or radiotherapy. The technologist will explain the test and get your permission to do it. They will measure your height and weight. They will check your blood sugar with a finger prick before the injection. If you have brought medicine for claustrophobia, the technologist will tell you when to take it.
- If your scan requires oral contrast, the technologist will tell you when to drink the second bottle.
- For women of child-bearing age, the technologist will make sure that you are not pregnant or breastfeeding. A pregnancy test may be needed if not sure.
- The technologist will start an IV in your arm and inject the FDG. You will stay quietly in a room by yourself for one hour to allow the FDG to travel throughout your body. We want you to rest quietly without moving, talking or chewing so that the test is accurate. You can continue to drink plain water. If you must empty your bladder, wait at least 30 minutes after the injection before going to the washroom. You should not use your cell phone during this hour. If you came with a friend or family member, they will not be able to stay with you during this hour.
- Near the end of the hour we will ask you to use the washroom to empty your bladder.
- The technologist will then move you into the scanner. You will lie down on your back on the bed of the scanner. Your arms will be above your head if possible. You will be asked to keep still for the scan. The bed will move you through the scanner while the pictures are taken. The technologist will watch you during the entire scan. The scan will take up to 40 minutes. Occasionally, extra pictures may be required but not typically. You will then be moved off the bed and will be free to go. If you came with a family member or friend, they can rejoin you now.

WHAT SHOULD DO AFTER MY PET/CT EXAM?

- Drink a lot of fluids that day to rinse the FDG out of your body. You may now return to your normal diet and exercise level.
- For patients whose appointment was before 10 am, you may take your normal diabetes pills or dose of insulin, and a normal breakfast after your scan.
- A report of the results of your scan will be sent to your physician.
- Inform the technologist if you will be crossing the border in the next two days.